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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/697,542	10/26/2000	Kunisaburo Tomono	P/1071-1154	5711

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EXAMINER

BERNATZ, KEVIN M

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 09/10/2002

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/697,542

Applicant(s)

TOMONO ET AL.

Examiner

Kevin M Bernatz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restriction

1. Claims 9 - 16 are noted to be nominal apparatus claims. Restriction has not been made between the product of claims 1 - 8 and the apparatus of claims 9 - 16 because the apparatus claims recite no significant apparatus elements. If apparatus claims containing significant apparatus elements are added by amendment they may be subject to restriction due to original presentation.

Claim Objections

2. Claim 4 is objected to because of the following informalities: there appears to be a typographical error in the ranges for x and y. Based on claim ³~~4~~ and Table 1, it appears that claim 4 should read "wherein x is 0.205 – 0.480, y is 0.05 – 0.1 ...". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The numerical ranges in claim 4 are not in agreement with the ranges in claim 3 (see Claim Objections, above). For purposes of evaluating the prior art, the claim was interpreted as reading: "wherein x is 0.205 – 0.480, y is 0.05 – 0.1 ...".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1 - 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al. (U.S. Patent No. 5,206,620).

Regarding claim 1, the claimed invention reads on Watanabe et al. as follows: Watanabe et al. disclose a composite magnetic material comprising a ferrite powder and a resin (col. 10, lines 55 – 59) wherein said ferrite powder comprise a Ni and Co containing spinel ferrite (col. 3, lines 15 – 16 and col. 10, lines 40 – 43).

Regarding claim 2, Watanabe et al. disclose adding elements to the ferrite meeting applicants' claimed limitations (col. 3, lines 21 - 29). Furthermore, in the instant case, the claimed elements are all known additives to tailor the magnetic and mechanical/corrosion properties of ferrites and are equivalents in the field of soft ferrites.

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Regarding claims 3 and 4, Watanabe et al., disclose atomic percents overlapping applicants' claimed ranges:

- x of 0.45 – 0.55 (col. 3, lines 23 – 24),
- y of 0 - 5 wt% (~ 0 - 7.5 atomic percent) (col. 3, lines 26 – 28 and notes by col. 10),
- z of 0 – 0.40 (col. 3, lines 25 – 26), and
- 1-x-y-z of 0.455 – 0.48 (col. 3, lines 23 – 24 and col. 8, lines 4 – 6 and 50 – 52).

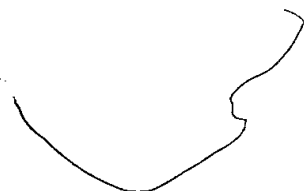
Regarding claims 5 and 6, Watanabe et al. disclose ferrites meeting applicants' claimed limitations (Example 3). The examiner notes that claim 6 does not require that Mg be present in the ferrite (i.e. z can still equal 0 in claim 6, resulting in 0 at% MgO).

Regarding claims 7 and 8, Watanabe et al. disclose adding Cu and/or Zn (col. 4, lines 23 - 29).

Regarding claims 9 - 16, Watanabe et al. disclose an inductor element meeting applicants' claimed limitations (col. 1, line 11 and col. 10, lines 58 - 59).

7. Claims 1 – 3, 6 – 11 and 14 - 16 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 07-037711 A. See provided machine translation and Derwent Abstract translation of Tokkyo Kokai 07-037711 A.

Regarding claim 1, the claimed invention reads on '711 A as follows: '711 A disclose a composite magnetic material comprising a ferrite powder and a resin



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(Derwent Abstract) wherein said ferrite powder comprise a Ni and Co containing spinel ferrite (Derwent Abstract).

Regarding claim 2, '711 A disclose adding elements to the ferrite meeting applicants' claimed limitations (Derwent Abstract). Furthermore, in the instant case, the claimed elements are all known additives to tailor the magnetic and mechanical/corrosion properties of ferrites and are equivalents in the field of soft ferrites.

Regarding claims 3 and 4, '711 A disclose atomic percents overlapping applicants' claimed ranges:

- x of 0.026 – 0.464 (Abstract value for "a(1-x)"),
- y of 0 – 0.035 (Abstract value for "d"),
- z of 0.013 – 0.762 (Abstract values for "ax" and "b"), and
- 1-x-y-z of 0.32 – 0.485 (Abstract values for "c").

Regarding claim 5, '711 A disclose $Me = Zn$, where the atomic percent of Zn can equal 0, thereby meeting applicants' claimed limitations (Abstract values for "b").

Regarding claim 6, the examiner notes that claim 6 does not require that Mg be present in the ferrite (i.e. z can still equal 0 in claim 6, resulting in 0 at% MgO).

Regarding claims 7 and 8, '711 A disclose adding Cu and/or Zn (Abstract).

Regarding claims 9 - 16, '711 A disclose an inductor element meeting applicants' claimed limitations (Derwent Abstract).

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Claim R jections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. as applied above.

Watanabe et al. disclose the claimed invention as described above.

Regarding claims 3 and 4, Watanabe et al. fail to disclose a single embodiment explicitly meeting all of applicants' claimed composition limitations.

In the event that one of ordinary skill would not readily envisage such a composition, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to have selected any values out of the Watanabe et al. disclosed ranges in order to optimize the magnetic properties, mechanical properties and corrosion resistance of the ferrite product.

It would therefore have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as the composition atomic percentages through routine experimentation in the absence of a showing of criticality in the claimed composition atomic percentages, given the teaching in Watanabe et al. with regard to preferred ranges to use for the various components. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding claims 5 and 6, Watanabe et al. disclose ferrites meeting applicants' claimed limitations (Example 3). The examiner notes that claim 6 does not require that Mg be present in the ferrite (i.e. z can still equal 0 in claim 6, resulting in 0 at% MgO).

Regarding claims 7 and 8, Watanabe et al. disclose adding Cu and/or Zn (col. 4, lines 23 - 29).

Regarding claims 9 - 14, Watanabe et al. disclose the claimed limitations as described above.

10. Claims 3, 6 - 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over '711 A as applied above.

'711 A disclose the claimed invention as described above.

Regarding claims 3 and 4, '711 A fail to disclose a single embodiment explicitly meeting all of applicants' claimed composition limitations.

In the event that one of ordinary skill would not readily envisage such a composition, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to have selected any values out of the '711 A disclosed ranges in order to optimize the magnetic properties, mechanical properties and corrosion resistance of the ferrite product.

It would therefor have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as the composition atomic percentages through routine experimentation in the absence of a showing of criticality in the claimed composition atomic percentages, given the teaching in '711 A

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with regard to preferred ranges to use for the various components. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding claim 6, the examiner notes that claim 6 does not require that Mg be present in the ferrite (i.e. z can still equal 0 in claim 6, resulting in 0 at% MgO).

Regarding claims 7 and 8, '711 A disclose adding Cu and/or Zn (Abstract).

Regarding claims 9 – 11 and 14, '711 A disclose an inductor element meeting applicants' claimed limitations (Derwent Abstract).

11. Claims 4, 5, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '711 A as applied above, and further in view of Uchikoba (U.S. Patent No. 6,127,296).

JP '711 A disclose the claimed invention as described above.

Regarding claim 4, JP '711 A fail to disclose a CoO atomic percent meeting applicants' claimed limitations.

However, Uchikoba teaches a spinel ferrite possessing a relatively low sintering temperature while still possessing a sufficiently high volume resistivity (col. 2, lines 37 – 40) where the amount of CoO added is 1/6 the amount of Fe₂O₃ added (col. 2, lines 44 – 53; col. 3, lines 30 – 38; col. 7, lines 53 – 60; col. 9, lines 49 – 55; claim 1; and notes made in columns 11 – 12). Given the taught range in Fe₂O₃ atomic percent in JP '711 A, one of ordinary skill in the art, this would lead to a maximum atomic percent of CoO of approximately 5 – 8 atomic percent).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of JP '711 A to include up to 8 atomic percent CoO as taught by Uchikoba in order to produce a spinel ferrite possessing a relatively low sintering temperature while still possessing a sufficiently high volume resistivity.

Regarding claim 5, '711 A disclose Me = Zn, where the atomic percent of Zn can equal 0, thereby meeting applicants' claimed limitations (Abstract values for "b").

Regarding claims 12 and 13, '711 A disclose an inductor element meeting applicants' claimed limitations (Derwent Abstract).

12. Claims 1 – 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lebourgeois et al. (U.S. Patent No. 6,071,430) in view of JP '711 A.

Regarding claim 1, Lebourgeois et al. disclose a composite magnetic material comprising a ferrite powder, wherein said ferrite powder comprises a Ni and Co containing ferrite (col. 2, lines 3 – 15; col. 3, lines 1 – 7; and Examples).

It has been held that where claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established and the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC 102 or on *prima facie* obviousness under 35 USC 103, jointly or alternatively. *In re Best*, 562 F.2d

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1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the *prime facie* case can be rebutted by **evidence** showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d at 1255, 195 USPQ at 433.

In the instant case, the disclosed product is produced by substantially identical processes and components and is therefor deemed to inherently be "spinel ferrite".

Therefore, in addition to the above disclosed limitations, the presently claimed property of a "spinel ferrite" would have inherently been present because the disclosed product is produced by substantially identical processes and components, and there is no evidence of record showing that the disclosed prior art products do not necessarily possess the characteristics of the claimed product.

Lebourgeois et al. fail to disclose forming the ferrite powder with a resin.

However, '711 A teach that inductors possessing a small size and light weight can be formed by combining a spinel ferrite material in a resin (Machine Translation, Paragraphs 0002 – 0003 and Derwent Abstract).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Lebourgeois et al. to include a resin binder as taught by '711 A in order to form a small, light weight inductor.

Regarding claim 2, Lebourgeois et al. disclose adding elements meeting applicants' claimed limitations (col. 2, lines 3 - 15). Furthermore, in the instant case, the

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claimed elements are all known additives to tailor the magnetic and mechanical/corrosion properties of ferrites and are equivalents in the field of soft ferrites.

Regarding claims 3 and 4, Lebourgeois et al. disclose compositions in terms of $\text{Fe}_{2+d}\text{O}_4$ which appear to read on applicants' claimed composition limitations (col. 2, lines 3 – 16 and Examples). It would therefor have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as the composition atomic percentages through routine experimentation in the absence of a showing of criticality in the claimed composition atomic percentages, given the teaching in both Lebourgeois et al. and '711 A with regard to preferred ranges to use for the various components. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding claims 5 and 6, Lebourgeois et al. disclose ferrites meeting applicants' claimed limitations. Specifically, the examiner notes that claim 6 does not require that Mg be present in the ferrite (i.e. if Mn is chosen as "Mg", z can still equal 0, resulting in 0 at% MgO reading on applicants' claimed limitations).

Regarding claims 7 and 8, Lebourgeois et al. disclose adding Cu and/or Zn (col. 2, lines 3 – 16 and Examples).

Regarding claims 9 - 16, Lebourgeois et al. disclose an inductor element meeting applicants' claimed limitations (col. 1, lines 11 – 16).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references all disclose spinel ferrites possessing both Ni and Co, though no formal rejections have been made using these references since the above relied upon references are deemed the closest prior art:

- Slick (U.S. Patent No. 3,609,083) – col. 4, lines 33 – 43
- Enokido et al. (U.S. Patent No. 6,033,594) – col. 8, lines 18 – 28 and Table 2
- Kakinuma et al. (U.S. Patent No. 5,906,768) – col. 5, line 53 bridging col. 6, line 21
- JP 09 – 007815 A – Abstract and Machine Translation
- JP 59 – 213628 A - Abstract

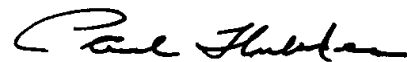
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (703) 308-1737. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



KMB
September 7, 2002



Paul Thibodeau
Supervisory Patent Examiner
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